Minnesota Million: Reforestation For Climate, Nature and People

The Nature Conservancy

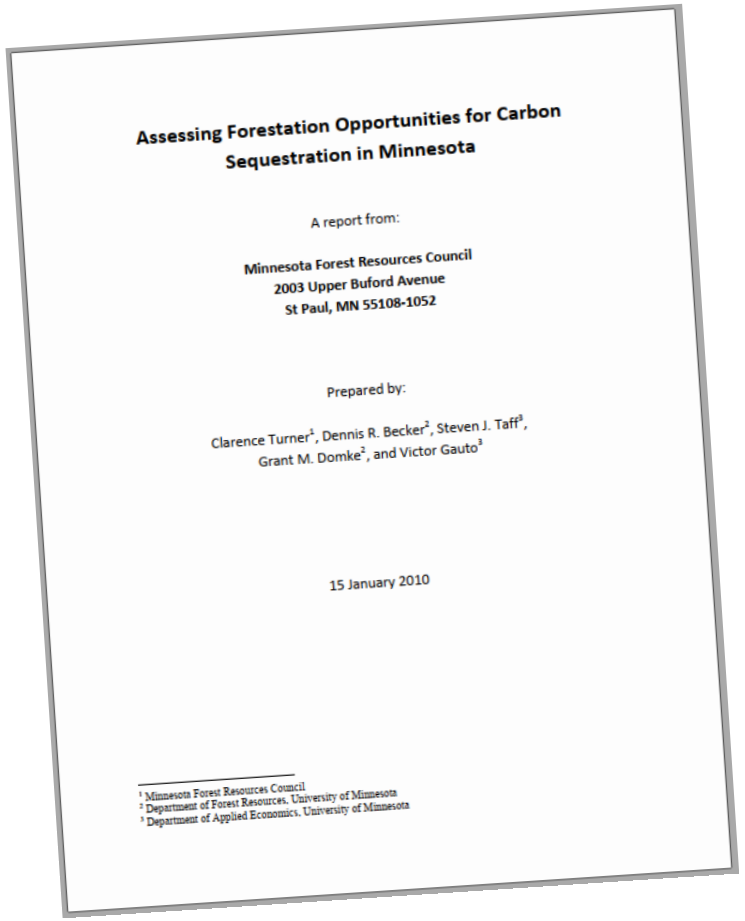
Mary Hammes – Reforestation Strategy Manager

Minnesota Forest Resources Council May 25, 2022

The Minnesota Million

By **2045**, reforest **1-million acres** in priority watersheds across Minnesota to sequester **1.5 million metric tons** (MMT) of CO_2e annually.

Reports



Assessing Forestation Opportunities for Carbon Sequestration in Minnesota

A report from:

Minnesota Forest Resources Council
2003 Upper Buford Avenue
St Paul, MN 55108-1052

Prepared by:

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15 January 2010

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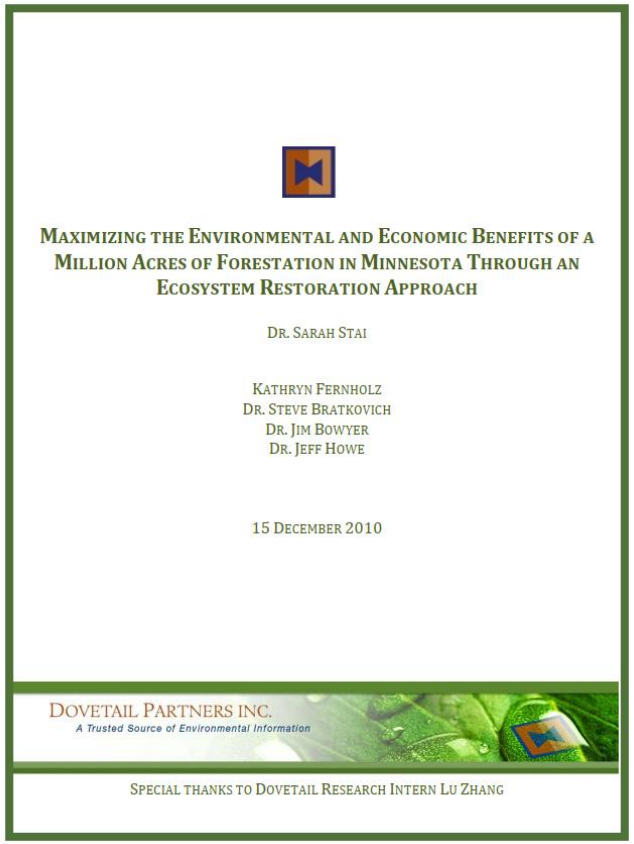

MAXIMIZING THE ENVIRONMENTAL AND ECONOMIC BENEFITS OF A MILLION ACRES OF FORESTATION IN MINNESOTA THROUGH AN ECOSYSTEM RESTORATION APPROACH

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DR. STEVE BRATKOVICH
DR. JIM BOWYER
DR. JEFF HOWE

15 DECEMBER 2010

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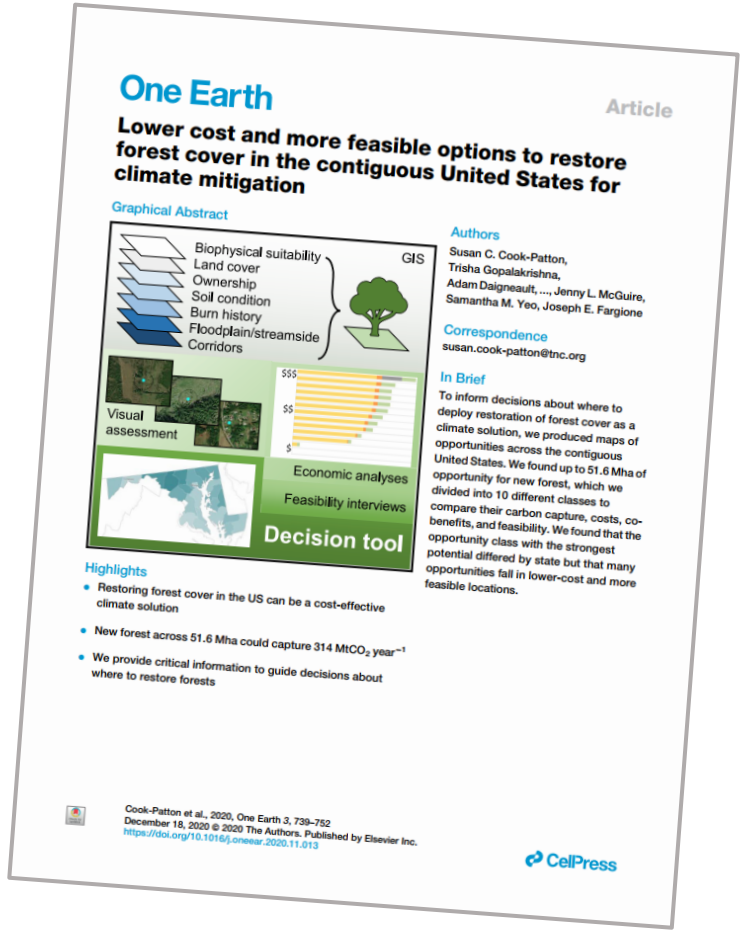
SPECIAL THANKS TO DOVETAIL RESEARCH INTERN LU ZHANG



One Earth Article

Lower cost and more feasible options to restore forest cover in the contiguous United States for climate mitigation

Graphical Abstract

Authors
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In Brief
To inform decisions about where to deploy restoration of forest cover as a climate solution, we produced maps of opportunities across the contiguous United States. We found up to 51.6 Mha of opportunity for new forest, which we divided into 10 different classes to compare their carbon capture, costs, co-benefits, and feasibility. We found that the opportunity class with the strongest potential differed by state but that many opportunities fall in lower-cost and more feasible locations.

Highlights

- Restoring forest cover in the US can be a cost-effective climate solution
- New forest across 51.6 Mha could capture 314 $MtCO_2$ $year^{-1}$
- We provide critical information to guide decisions about where to restore forests

Cook-Patton et al., 2020, One Earth 3, 739–752
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https://doi.org/10.1016/j.oneear.2020.11.013

CellPress

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Nature’s Sequestration Potential in Minnesota

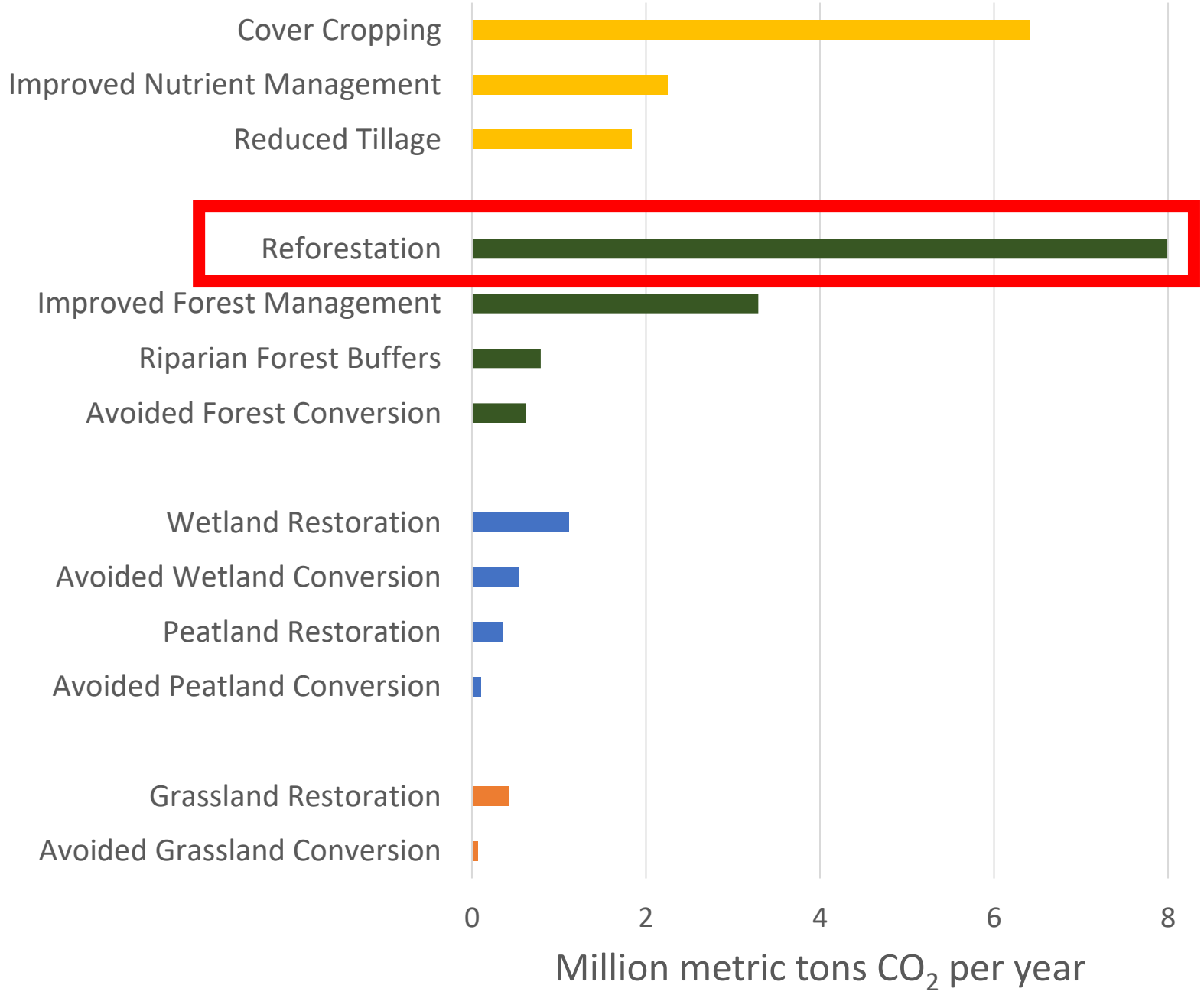
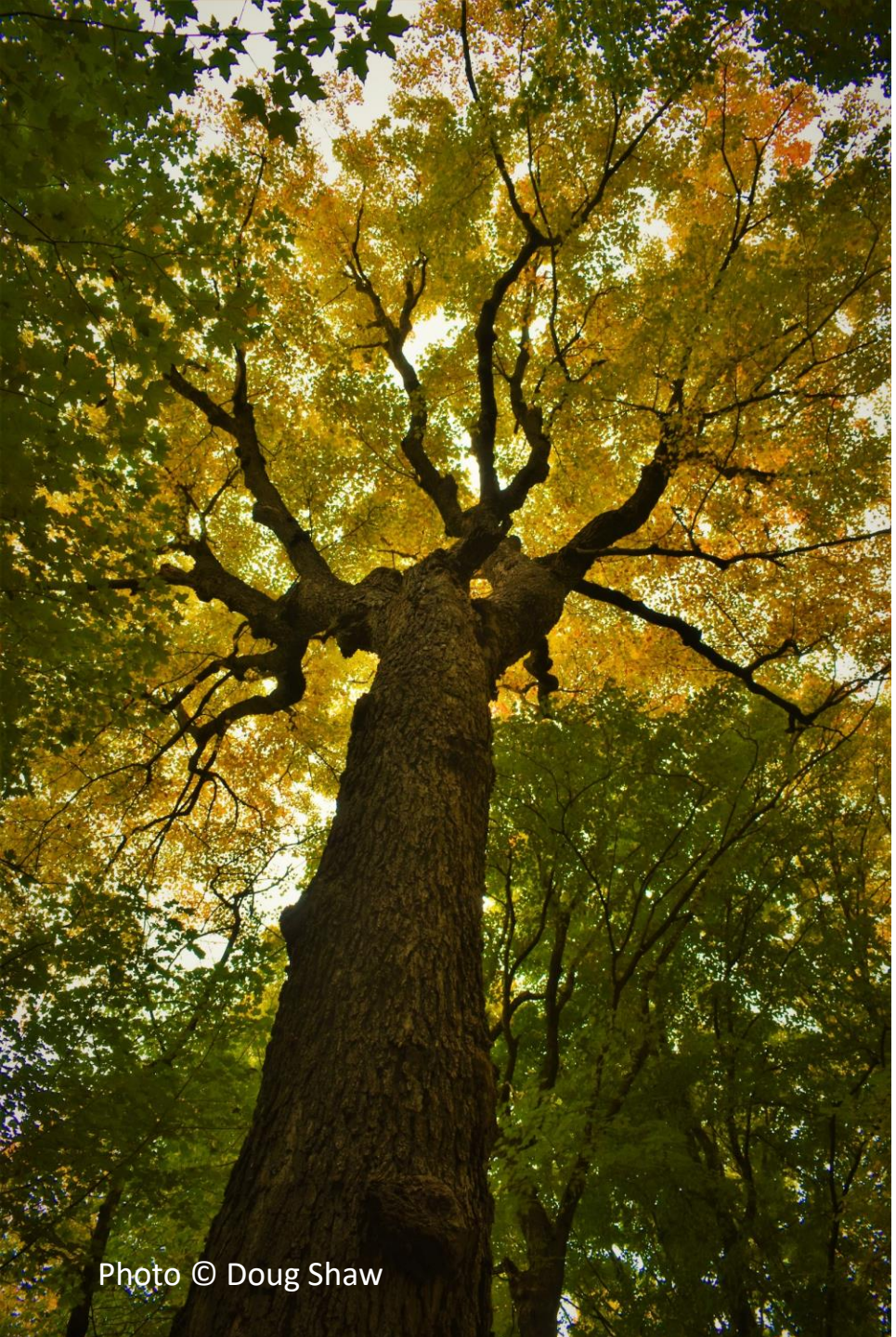


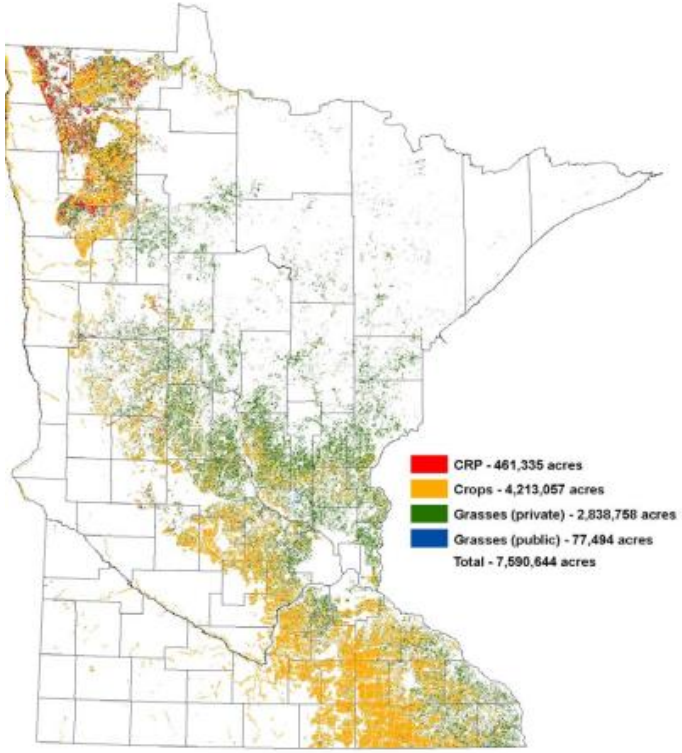
Photo © Richard Hamilton Smith



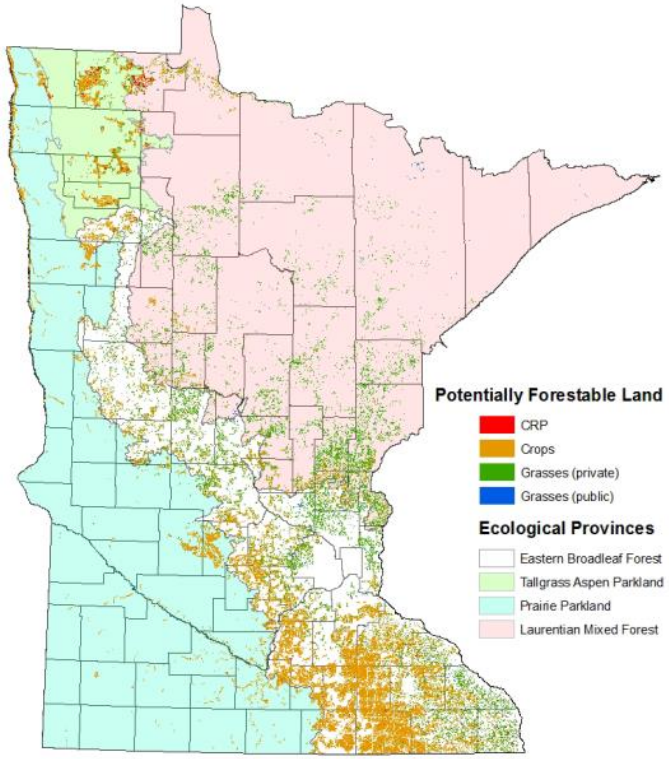
Reforestation: A Natural Climate Solution

- Sequester Carbon
- Clean air
- Clean water
- Timber economy
- Recreation
- Habitat
- Biodiversity

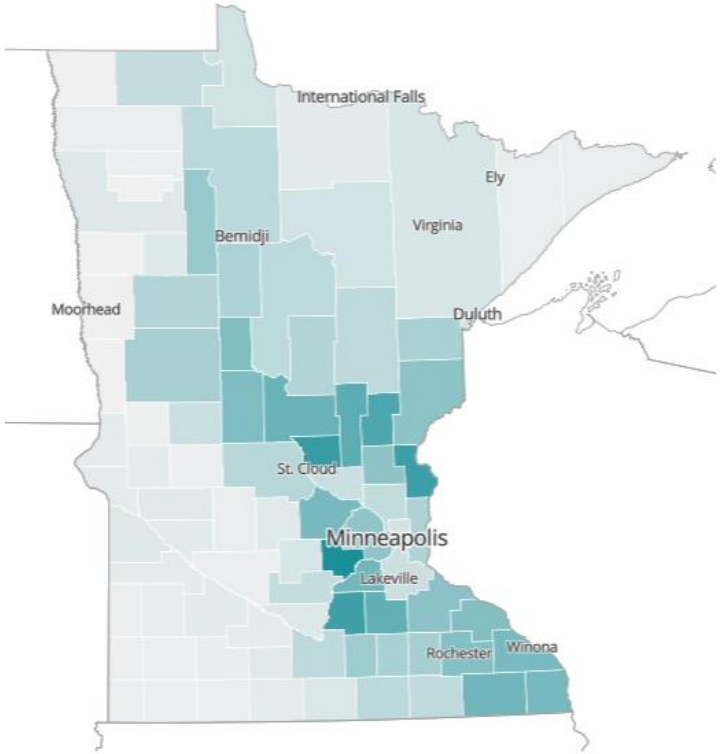
How big is the reforestation opportunity?



7.6 Million Acres
MFRC 2010

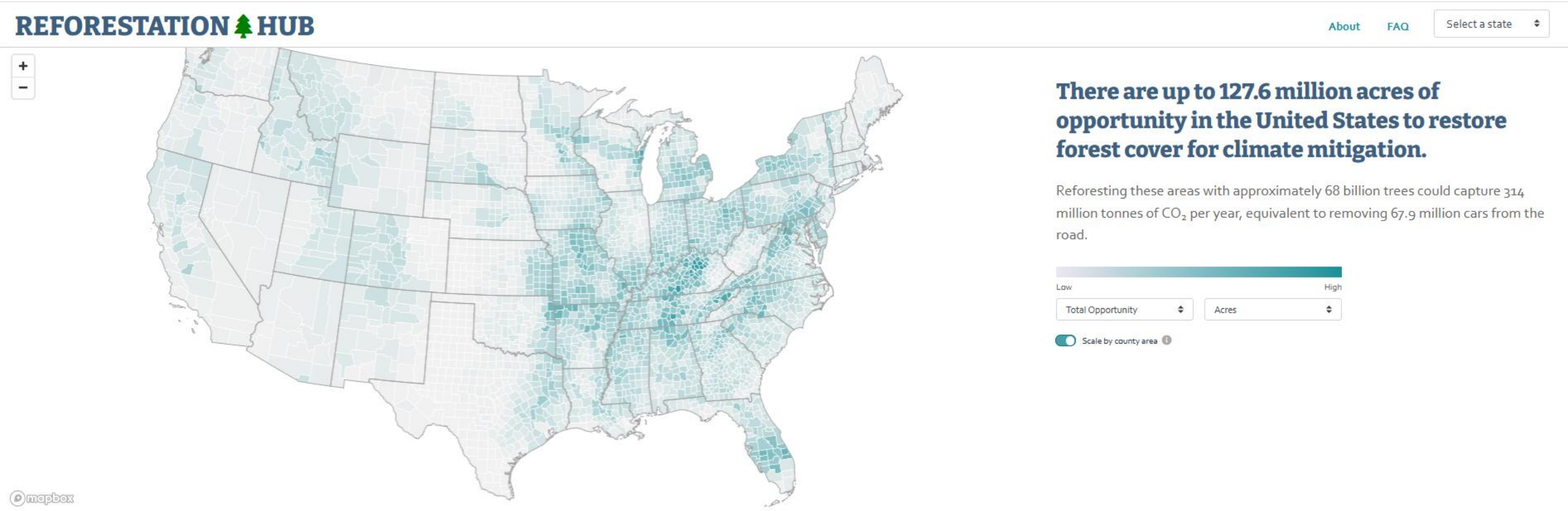


5.4 Million Acres
Dovetail Partners 2010



3.6 Million Acres
TNC/AF 2020

https://www.reforestationhub.org/



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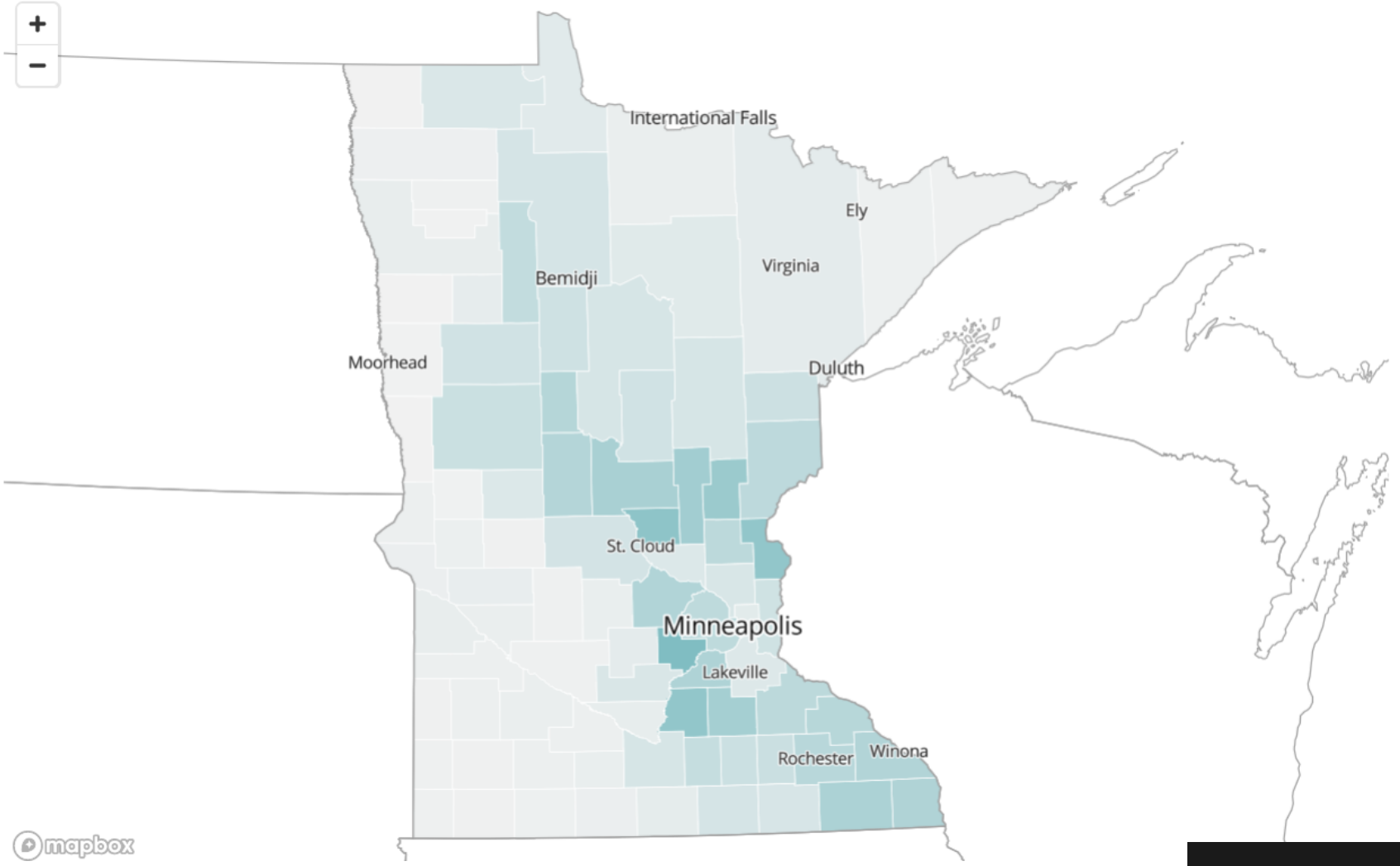
REFORESTATION HUB



There are up to 3.59 million acres of opportunity in Minnesota to restore forest cover for climate mitigation.

Reforesting these areas with approximately 2 billion trees could capture 5.73 million tonnes of CO_2 per year, equivalent to removing 1.24 million cars from the road.

Low High

Total Opportunity | Acres

Scale by county area | Scale map colors to MN

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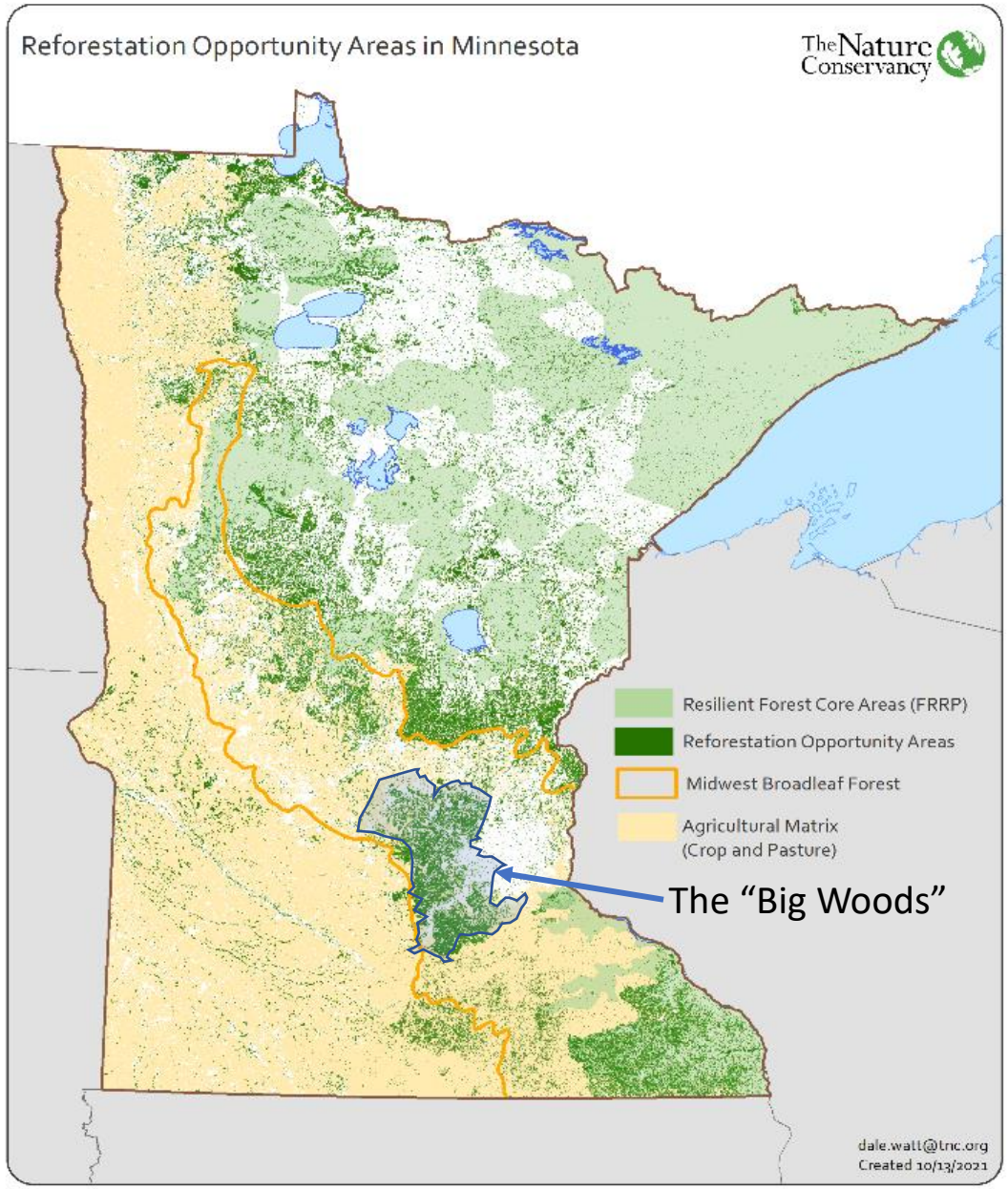
Minnesota Million: A Prospectus

"When we plant trees, we plant the seeds of peace and hope."

--Wangari Maathai

Reforestation Opportunity Areas



Technical Advisory Committee

- Aitkin County Soil and Water Conservation District
- Board of Water and Soil Resources
- Dovetail Partners, Inc.
- Minnesota Department of Natural Resources
- Minnesota Association of Resource Conservation and Development Councils
- Natural Resources Conservation Service
- Rajala Companies/Minnesota Timber Millwork
- Sustainable Farming Association
- The Nature Conservancy
- Three Rivers Park District
- USDA Forest Service

What will it take?

- Partnerships
- ~50,000 acres per year
- Landowner Engagement and Delivery Programs
- 780 Million Climate-Adapted Seedlings
- Stewardship
- $1.78B

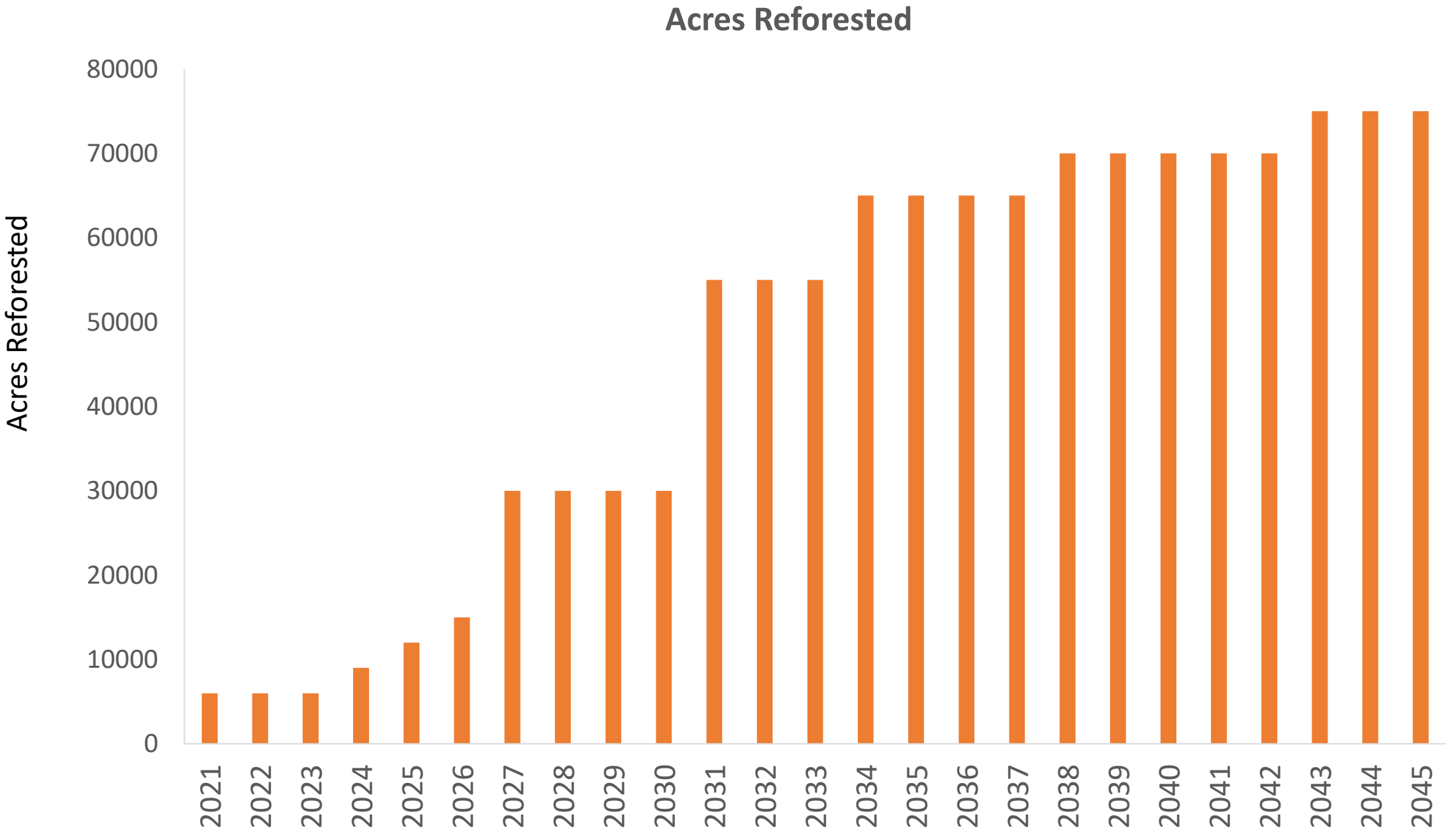
What will it take? 1 Million Reforested Acres by 2045

Acreage

- Current level of reforestation in Minnesota is **6,000 acres per year**

- ~50,000 acres per year for 20 years

Pace and Scale



What will it take? 1 Million Reforested Acres by 2045

Landowner Engagement & Delivery Programs

- Vast majority (~90%) of reforestation opportunity is on private land
- Utilize and expand existing delivery programs: Soil and Water Conservation Districts, State and Private Forestry

What will it take? 1 Million Reforested Acres by 2045

Increased Seedling Production

- Current level of seedling production is ~**6M per year***
- Species selected to withstand warmer, wetter climate
- **~780 M seedlings total**

MINNESOTA FOREST RESOURCES COUNCIL

Minnesota Forest Resources Council Resolution 2022-2
"Contributing to Minnesota's Climate Change Goals
by Increasing Minnesota Nursery Capacity"

1. **WHEREAS**, Minnesota's forests provide critical benefits for the economy, recreation, wildlife, clean water, biodiversity, and greenhouse gas mitigation; and

2. **WHEREAS**, the state forest nursery once produced over 12 million seedlings per year to support those benefits, but now produces < 4 million; and

3. **WHEREAS**, the State Nursery is outdated, inefficient, and incapable of producing containerized seedlings; and

4. **WHEREAS**, a modernized state forest nursery and additional private nurseries could play a critical role in mitigating climate change and increasing other benefits forests provide; and

5. **AND WHEREAS**, per Minnesota Statutes 89A Subd2, it is the role of the Minnesota Forest Resources Council to recommend policies and practices that: foster the productivity of the state's forests to provide a diversity of sustainable benefits at site levels and landscape levels; enhance the ability of the state's forest resources to provide future benefits and services; and foster no net loss of forest land in Minnesota;

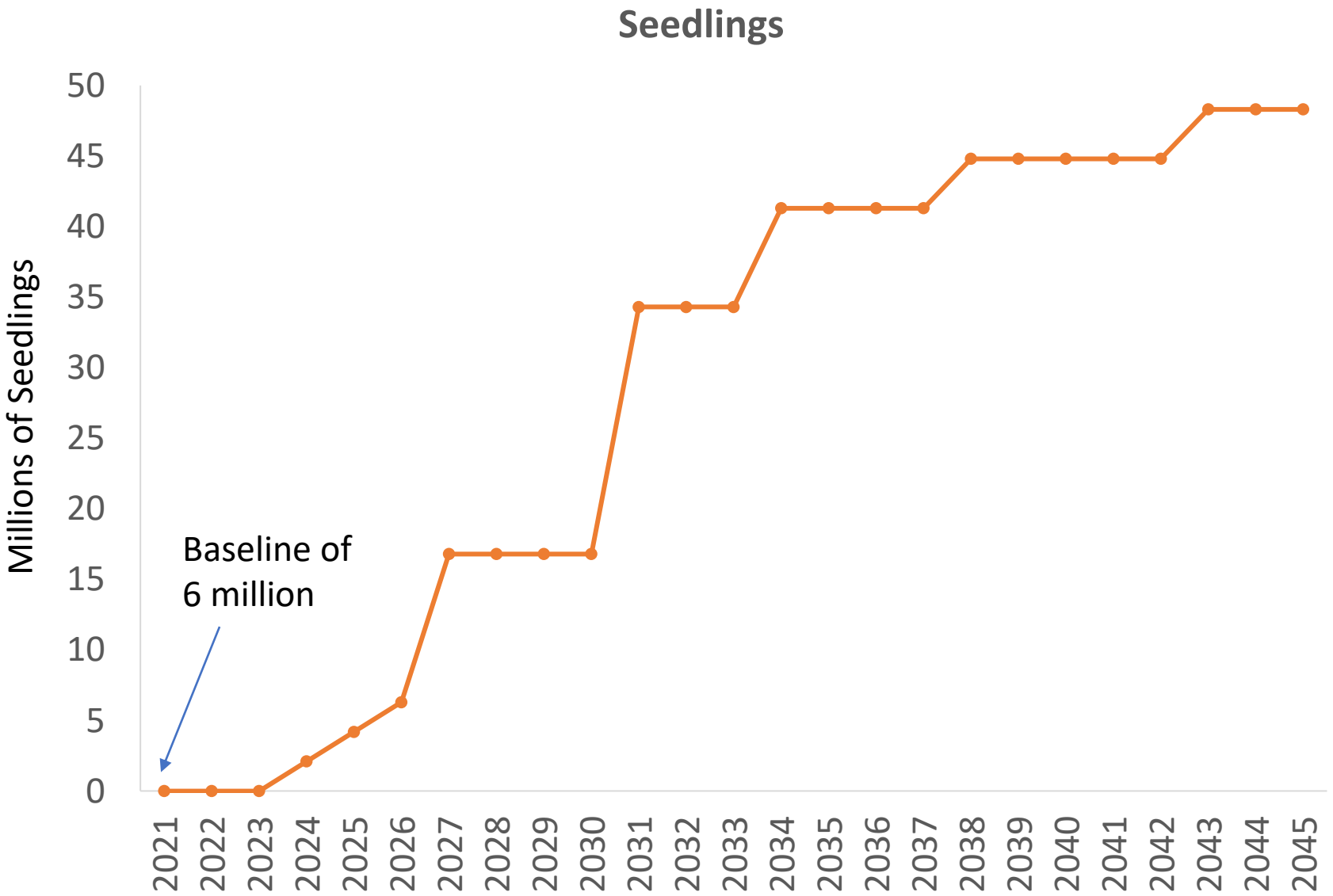
6. **BE IT THEREFORE RESOLVED**, the Minnesota Forest Resources Council recommends enhancing nursery capacity in both State run and privately owned forest nurseries by:

    a. Upgrading State Forest Nursery facilities by 2027, to produce both containerized and bare-root seedlings, using modern technology to track seed-source locations, while minimizing risks to seeds that are stored on site.

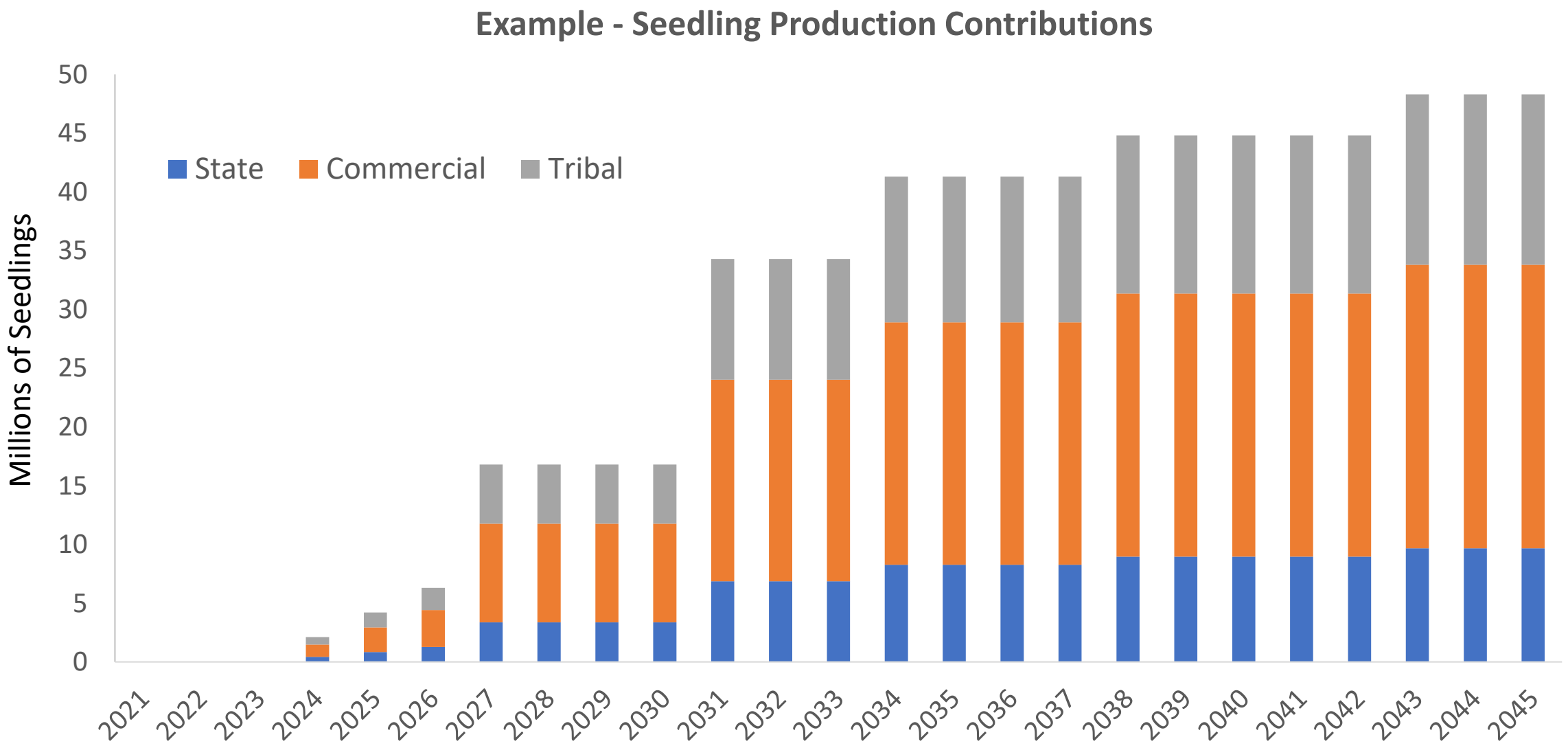
    b. Increasing State Forest nursery production from current capacity of 4 million trees per year to 10 million trees per year by 2027, to double SFN capacity again by 2032, and to continue to increase SFN production capacity as necessary to plant up to 1 million acres of new forest by 2050.

    c. Providing long-term contracts and other incentives to support the expansion of private nursery operations in furtherance of reforestation goals.

Pace and Scale



Seedling Production Contribution



Funding Pathways and Opportunities

Short-term
(1-2 Years)

Federal-State-Private Funding

Medium-to-Long term
(3-5 Years+)

Carbon Markets


Seed Collection


Seedling Production


Planting


Maintenance

Alignment

- BWSR's LCCMR Proposal
- MFRC Resolution
- MASWCD Resolution
- MN State Forest Action Plan
- MN State Climate Action Framework

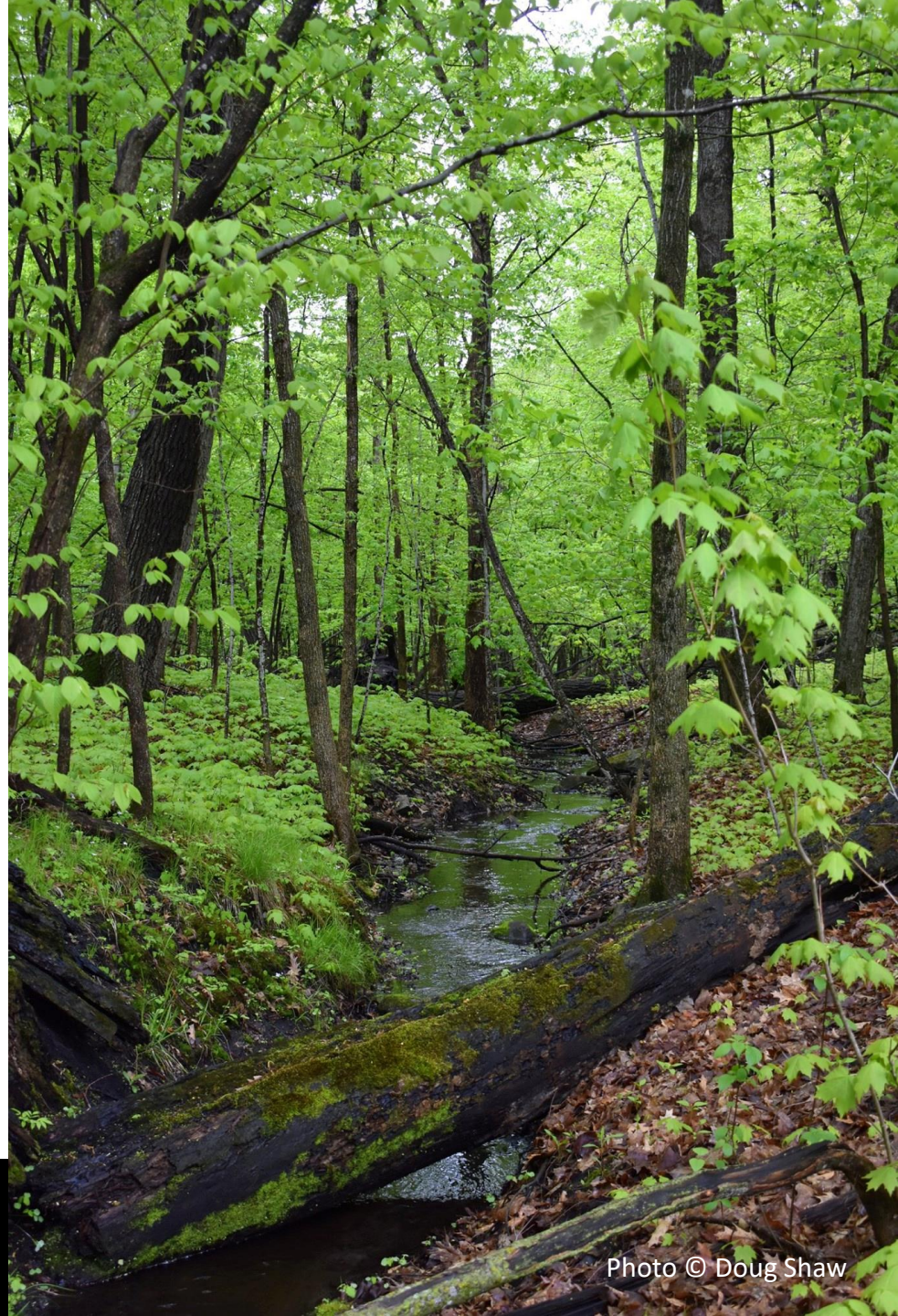


Photo © Doug Shaw

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Let’s get planting!

1. Establish a Statewide Reforestation Coalition.
2. Develop Local Implementation Teams that Center Intercultural Values.
3. Secure State, Federal and Private Funds to Support the Coalition and Local Teams.
4. Explore Carbon Markets.

Photo © Kyle Fredrickson

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We are committed to working together, in partnership with all Minnesotans, toward achieving the goals of the Minnesota Million.